CLAIMS

1. A coated metal surface on a solid support, wherein the coating consists of a self-assembled monolayer (SAM) of oligo(ethylene glycol)-terminated amide group-containing alkyl thiols firmly attached to the metal surface via the thiol-end and low molecular weight antigens bound via an amide-group to the SAM-forming OEG molecule, wherein the alkyl portion has 1 -20 methylene groups, wherein the oligo(ethylene glycol) portion has 1-15 ethylene oxy units, and wherein the antigens are optionally reversibly bound to antibodies specific for the antigens.

2. The coated metal surface on a solid support according to claim 1, wherein the metal is selected from the group consisting of gold, silver, aluminum, titanium and chromium.

3. The coated metal surface on a solid support according to claim 1 or 2, wherein the antigens are the same or different and are bound to the same monolayer or are bound to different monolayers in patches on the solid support, and are selected from the group consisting of optionally derivatized explosives and narcotics.

4. The coated metal surface on a solid support according to claim 3, wherein the explosives are selected from the group consisting of trinitrotoluene (TNT), dinitrotoluene (DNT), hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazine (HMX), pentaerythritol tetranitrate (PETN), and nitroglycerine (NG).

5. The coated metal surface on a solid support according to claim 3, wherein the narcotics are selected from the group consisting of cocaine, heroine, amphetamine, methamphetamine, cannabinols, tetrahydrocannabinols (THC), and methylenedioxy-N-methylamphetamine (Ecstacy).

6. The coated metal surface on a solid support according to any one of claims 1-5, wherein the solid support is a piezoelectric crystal electrode or a glass plate or prism.

7. The coated metal surface on a solid support according to any one of claims 1-6, wherein the oligo(ethylene glycol) has 4-6 ethylene oxy units and the alkyl group has 15 methylene units.

8. Use of the coated metal surface on a solid support according to any one of the claims 1 – 7 as part of an analysis device for detection in an aqueous solution of an analyte antigen with higher affinity to an antibody than the antigen of the coating by monitoring the displacement of the antibody from the coating.

9. A method of detecting analyte antigens in an aqueous solution comprising activating, if necessary, the coated metal surface on a solid support according to any one of claims 1-7 lacking bound antibodies by bringing antigen-specific antibodies into contact with the coated metal surface in an aqueous solution, allowing binding of the antibodies to the antigens of the coating, removing excess antibodies, bringing the aqueous solution possibly containing the analyte antigens that have higher affinity to the antibodies than the antigens of the coating into contact with the antibodies reversibly bound to the coating, allowing the antibodies to dissociate and react with the analyte antigens, and detecting the loss of mass on the coated metal surface by means of an analysis device.

10. A method according to claim 9, wherein the analysis device is selected from the group consisting of a Piezoelectric Quarts Crystal Microbalance device and a Surface Plasmon Resonance biosensor.

11. The method according to claim 9 or 10, wherein the analysis device comprises a flow cell in which the coated metal surface on a solid support according to any one of claims 1-7 is placed.